



**BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF APPEALS AND INTERFERENCES**

In re Patent Application of:

Chas. E. Schinner et al.

Serial No.: 09/676,649

Filed: September 29, 2000

For: *Digital Still Camera with Remaining  
Picture Count Indication*

Confirmation No.: 3209

Group Art Unit: 2615

Examiner: Y.K. Aggarwal

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**BRIEF ON APPEAL**

**BOARD OF PATENT APPEALS & INTERFERENCES**

Director for Patents and Trademarks

P.O. Box 1450

Alexandria, Virginia 22313-1450

Sir:

Applicants, through their undersigned attorney, hereby submit this Brief in connection with their Appeal of the final rejection mailed August 9, 2004, finally rejecting Claims 1, 2, and 4-25, which are set forth in the CLAIMS APPENDIX attached to this brief.

**I. Real Party in Interest**

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

**II. Related Appeals and Interferences**

There are no related Appeals or Interferences.

### III. Status of the Claims

Claims 1, 2 and 4-25 are pending in the application.

Claims 1, 2 and 4-25 are rejected.

Claims 1, 2 and 4-25 are appealed.

### IV. Status of Amendments

All amendments have been entered. There are no outstanding amendments.

### V. Summary of the Claimed Subject Matter

Fig. 2 reproduced hereafter is a block diagram of an embodiment of the present invention illustrating its electronic circuitry.

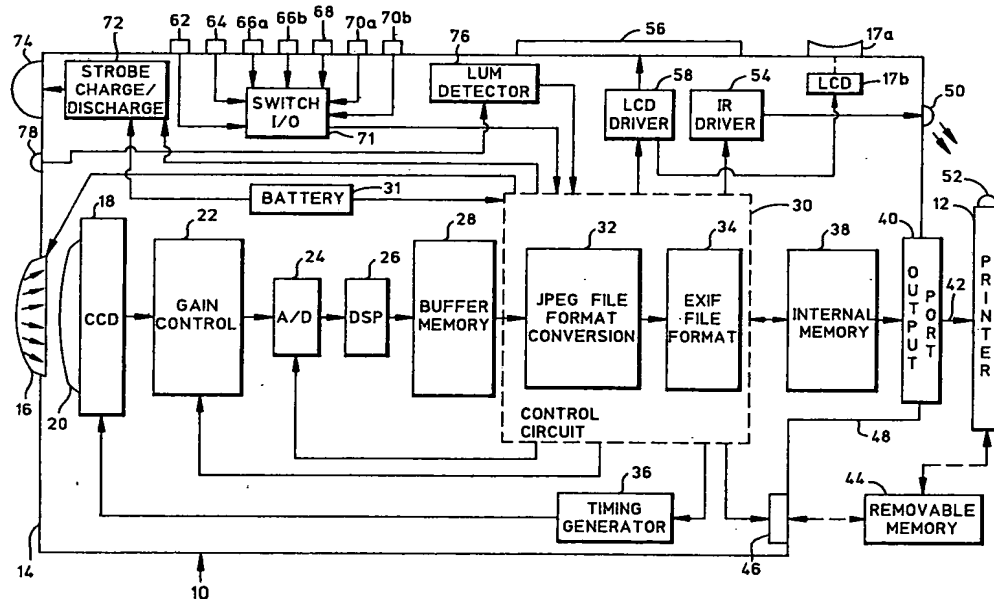


Fig. 2

Fig. 3, reproduced hereafter is a flow diagram illustrating the operation of the remaining picture count algorithm of an embodiment of Applicants' digital still camera.

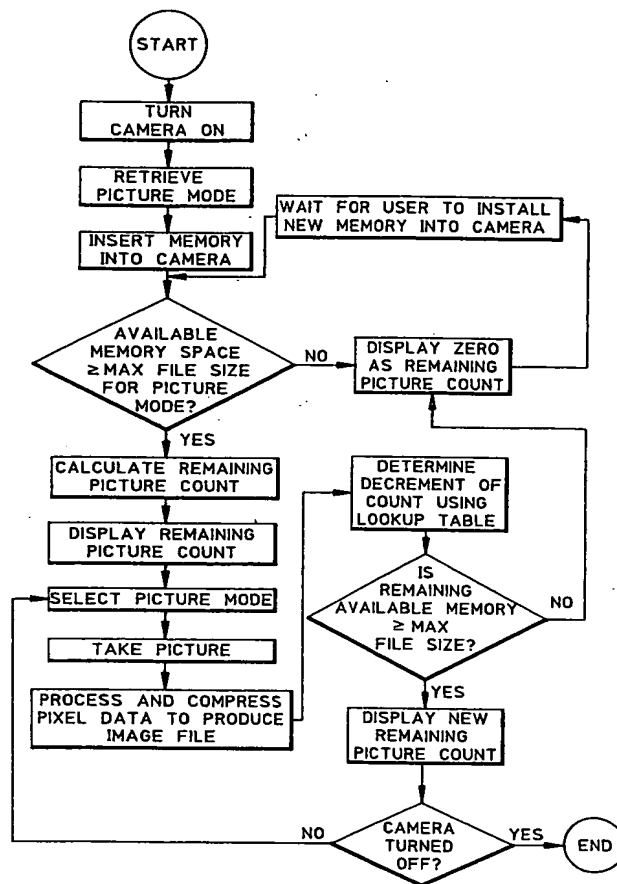


Fig. 3

According to independent Claim 1, an image sensor 18 (Fig. 2) mounted in a housing 14 receives light and generates output signals representative of an image (page 6, lines 12-18). A processing circuit 22, 24, 26, 28, 36 (Fig. 2) also mounted in the housing 14 is connected to the image sensor 18 for processing the output signals (page 6, line 34 through page 7, line 9). A control circuit 30 (Fig. 2) mounted in the housing 14 is connected to the processing circuit 22, 24, 26, 28, 36 for successively generating a plurality of image files corresponding to a plurality of images and storing the image files in a memory 38, 44 (Fig. 2) in accordance with the selected one of the plurality of the picture modes (page 7, lines 11-37). The control circuit 30 determines a remaining picture count after each image file is generated based on a predetermined decrement number corresponding to an actual image file size of each image file (page 11, line 17 through page 12, line 24). Means 56 (Figs. 1 and 2) are mounted in the housing 14 for indicating the remaining picture count to a user (page 12, lines 7-9).

Independent method Claim 11 is directed to a method (Figs. 3 and 9) of operating a digital still camera which includes the steps of selecting a picture mode, taking a picture, storing an image file representing the picture in a memory in accordance with the selected picture mode, determining a remaining picture count based on a predetermined decrement number corresponding to an actual image file size, and indicating the remaining picture count to a user (page 12, lines 7-15).

Independent Claim 20 is similar in scope to Claim 1, except that the former defines the picture modes (page 10, lines 25-30) and requires that the control circuit determine the remaining picture count based on a plurality of lookup tables (Figs. 4-8) corresponding to the picture modes (page 12, lines 12-13). Claim 20 also requires the control circuit to set the remaining picture count to zero when there is insufficient memory to store a predetermined maximum image file size (page 12, lines 15-22).

Independent Claim 21 is similar in scope to Claim 1 except that the former requires the control circuit determine a remaining picture count by searching a lookup table (Figs. 4-8) corresponding to the selected picture mode (page 12, lines 12-13) and using an actual image file size of an image file just generated (page 12, lines 9-11).

#### **VI. Grounds of Rejection to be Reviewed on Appeal**

Whether Claims 1, 2, 4, 6, 8, 11-14, 16, 18, 20 and 21 are anticipated under 35 USC §102(a) and 102(e) by U.S. Patent No. 6,122,411 of Shen et al.

Whether the subject matter of Claim 5 would have been obvious under 35 USC §103(a) over U.S. Patent No. 6,122,411 of Shen et al.

Whether the subject matter of Claim 15 would have been obvious under 35 USC §103(a) over Shen et al. in view of published U.S. Patent Application No. 2003/0058355 of Wong et al.

Whether the subject matter of Claims 7, 9, 10, 17 and 19 would have been obvious under 35 USC §103(a) over Shen et al., in view of U.S. Patent No. 5,481,303 of Uehara.

Whether the subject matter of Claims 22 and 23 would have been obvious under 35 USC §103(a) over Shen et al. in view of U.S. Patent 6,282,605 of Moore.

Whether the subject matter of Claim 24 would have been obvious under 35 USC §103(a) over Shen et al. in view of U.S. Patent No. 6,233,010 of Roberts et al.

Whether the subject matter of Claim 25 would have been obvious under 35 USC §103(a) as being unpatentable over Shen et al. in view of U.S. Patent No. 6,603,509 of Haruki.

## VII. Argument

### A. Lack of Novelty Rejection of Claims 1, 2, 4, 6, 8, 11-14, 16, 18, 20 and 21.

In the final Office Action, Claims 1, 2, 4, 6, 8, 11-14, 16, 18, 20 and 21 were rejected for lack of novelty over U.S. Patent No. 6,122,411 of Shen et al., assigned to Apple Computer, Inc. Independent Claim 1 was previously amended to require that the remaining picture count is based on a predetermined decrement number corresponding to *an actual image file size* of each image file. Support for this amendment is found in the specification on page 12, lines 9-12 and lines 30-32. Similarly, independent Claim 11 was previously amended to require that the remaining picture count be determined based on a predetermined decrement number corresponding to *an actual image file size* of the image file. Similarly, independent Claim 21 was previously amended to require that the control circuit determine a remaining picture count by searching a lookup table *corresponding to the selected picture mode using an actual image file size of an image file just generated*.

The examiner bears the burden of establishing a *prima facie* case of anticipation. *In re King*, 801 F.2d 1324, 1327, 231 USPQ 136, 138-139 (Fed. Cir. 1986). Each claim in issue must first be correctly interpreted to define the scope and meaning of each limitation. *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). The prior art reference must disclose each element of the claimed invention, as correctly interpreted, and as “arranged in the claim.” *Lindermann Maschinefabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984).

Shen et al. discloses a digital still camera that automatically switches an image resolution setting from high to low when the memory can no longer store another image in high resolution. A processor first determines the amount of available memory for storing image data. The resolution is automatically switched from a high resolution to a low resolution when the amount of available memory is above a first predetermined level and below a second predetermined level. The number of pictures that can be taken in high resolution and the number of pictures that can be taken in low resolution are stored in a 4-bit memory which is connected to an 8-bit microprocessing unit. A display indicates how many images can still be taken in the selected resolution (high or low). When the camera is turned ON, both the number of pictures that can be taken, as well as the total memory used, are displayed on an LCD. Column 3, lines 32-34 and column 4, lines 20-25 of Shen et al. clearly indicate that the number of pictures that can be taken is determined based upon a *predetermined standard image file size* for high

resolution images and a *predetermined standard image file size* for low resolution images. The number of pictures that can be taken in each resolution of Shen et al. does not depend upon a predetermined decrement number corresponding to an actual file size of an image taken with the camera, as required by amended Claims 1 and 11. Nor does Shen et al. teach or suggest determining a remaining picture count *by searching a lookup table corresponding to the selected picture mode and using an actual image file size of an image file just generated*, as required by amended Claim 21.

In paragraph 3 on page 2 of the final Office Action, as well as paragraph 4 which spans pages 2 and 3, the examiner apparently argues that column 3, lines 32-39 and column 4, lines 20-35 indicate that the camera of Shen et al. determines a remaining picture count based on a predetermined decrement number corresponding to an *actual image file size* of the image file of a picture. Applicants respectfully disagree. Shen et al. clearly indicates that the number of pictures that can be taken is determined based upon a *predetermined standard image file size* for high resolution images and a *predetermined standard image file size* for low resolution images. Based on Applicants' description and drawings, one skilled in the art of digital still camera design would clearly understand the term "actual image file size" as used in independent Claims 1, 11 and 21, to mean a unique number of kilobytes of an image file just generated as opposed to some predetermined standard number. See Applicants' specification, page 12, lines 9-12 and lines 30-32.

Amended independent Claim 20 requires that the remaining picture count be based upon a plurality of lookup tables, each corresponding to one of the plurality of picture modes. Amended Claim 20 further requires the control circuit decrement the remaining picture count after each image file has been stored in the memory by a predetermined number corresponding to a size of the image file just stored. Again, Shen et al. relies upon predetermined standard image file sizes, and not the size of the image file just stored, which is a unique number for a picture just taken.

The examiner is respectfully reminded that the standard for lack of novelty is one of strict identity between the claimed invention in the application and the prior art reference. The digital still camera of Shen et al. uses a stored predetermined image file size and not an actual image file size to determine a remaining picture count to be displayed as expressly required by Applicants' amended independent Claims 1, 11 and 21.

Accordingly, for the foregoing reasons, the examiner has failed to establish a *prima facie* case of anticipation, and withdrawal of the lack of novelty rejection of Claims 1, 2, 4, 6, 8, 11-14, 16, 18, 20 and 21 over Shen et al. is requested.

**B. Obviousness Rejection of Claim 5.**

Claim 5 has been rejected for alleged obviousness over Shen et al., however, for the reasons argued above with respect to its amended parent claim, the subject matter of dependent Claim 5 would not have been obvious over Shen et al. This is because even if it would have been obvious to make the modification to Shen et al. as proposed by the examiner, which Applicants do not concede, the result would still not be the camera of amended Claim 1 wherein the remaining picture count is generated based upon a predetermined decrement number corresponding to an actual image file size of each image file.

**C. Obviousness Rejection of Claim 15.**

Claim 15 has been rejected for alleged obviousness over Shen et al. and Wong et al. Applicants do not concede it would have been obvious to modify Shen et al. in view of Wong et al. as proposed by the examiner. Moreover, in view of the amendment to independent parent Claim 11, dependent Claim 15 is allowable for the same reasons argued above that dependent Claim 5 is allowable.

**D. Obviousness Rejection of Claims 7, 9, 10, 17 and 19.**

Claims 7, 9, 10, 17 and 19 have been rejected for alleged obviousness over Shen et al. in view of Uehara. Applicants do not concede it would have been obvious to modify Shen et al. in view of Uehara et al. as proposed by the examiner. Moreover, these claims are allowable in view of the amendments to parent independent Claims 1 and 11, since even if Shen et al. were modified as proposed by the examiner in view of Uehara, the result would still not be the camera of amended Claim 1 or amended Claim 11 wherein the remaining picture count is generated based upon a predetermined decrement number corresponding to an actual image file size of each image file.

**E. Obviousness Rejection of Claims 22-25.**

Claims 22-25 have been rejected both for alleged obviousness over Shen et al., combined with various other references. However, without conceding that the examiner's proposed modifications of the Shen et al. camera would have been obvious over Moore, Roberts et al. or Haruki, even if the Shen et al. camera were modified as proposed by the examiner, the result would still not be the camera of amended Claim 21 which requires that the control circuit determine a remaining picture count by searching a lookup table *corresponding to the selected picture mode and using an actual image file size of an image file just generated.*

**VIII. Summary and Conclusion**

It is submitted that for the foregoing reasons, reversal of the rejection of Claims 1, 2 and 4-25 is requested. Authorization is given to charge Deposit Account No. 08-2025 for the fee required in connection with the filing of both the Notice of Appeal and this Appeal Brief.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael H. Jester", followed by the date "10-5-04".

By: Michael H. Jester  
Attorney for Applicants  
Registration No. 28,022



## CLAIMS APPENDIX

1. A digital still camera, comprising:

an image sensor mounted in a housing for receiving light and generating output signals representative of an image of an object or a scene of interest;

a processing circuit mounted in the housing and connected to the image sensor for processing the output signals from the image sensor;

a memory mounted in the housing;

a control circuit mounted in the housing and connected to the processing circuit for successively generating a plurality of image files corresponding to a plurality of images and storing the image files in the memory in accordance with a selected one of a plurality of picture modes, the control circuit determining a remaining picture count after each image file is generated based on a predetermined decrement number corresponding to an actual image file size of each image file; and

means mounted in the housing for indicating the remaining picture count to a user.

2. The camera of Claim 1 wherein the indicating means includes a display for providing a visual representation of the remaining picture count.

3. (Canceled)

4. The camera of Claim 3 wherein the control circuit uses a look up table to retrieve the predetermined decrement number.

5. The camera of Claim 1 wherein the control circuit utilizes a plurality of look up tables each corresponding to one of the plurality of picture modes.

6. The camera of Claim 1 wherein the control circuit causes the indicating means to indicate that the remaining picture count is zero when the control circuit determines that a remaining capacity of the memory is insufficient to store an image file of a predetermined maximum image file size.

7. The camera of Claim 1 the control circuit compresses an output from the  
2 processing circuit in generating the plurality of image files.

8. The camera of Claim 1 wherein the plurality of picture modes includes a plurality  
2 of picture resolutions.

9. The camera of Claim 1 wherein the plurality of picture modes includes a plurality  
2 of data compression levels.

10. The camera of Claim 1 wherein the plurality of picture modes includes a plurality  
2 of pre-set combinations of a selected one of a plurality of picture resolutions and a selected one  
of a plurality of data compression levels.

11. A method of operating a digital still camera, comprising the steps of:  
2 selecting one of a plurality of picture modes on a digital still camera;  
taking a picture with the camera;  
4 storing an image file representing the picture in a memory in the camera in accordance  
with the selected picture mode;  
6 determining a remaining picture count based on a predetermined decrement number  
corresponding to an actual image file size of the image file; and  
8 indicating the remaining picture count to a user.

12. The method of Claim 11 wherein the indicating step is performed by providing  
2 on the camera a visual representation of the remaining picture count.

13. The method of Claim 11 wherein the remaining picture count is initially  
2 determined based on a capacity of the memory before any image files have been stored in the  
memory and thereafter the remaining picture count is decremented after each image file has  
4 been stored in the memory by a predetermined number corresponding to the actual image file  
size of the image file just stored.

14. The method of Claim 13 wherein the predetermined decrement number  
2 corresponding to each actual image file size is retrieved from a look up table.

15. The method of Claim 11 wherein the image files are stored in a removable  
2 memory.

16. The method of Claim 11 and further comprising the step of indicating that the  
2 remaining picture count is zero when a remaining capacity of the memory is determined to be  
insufficient to store an image file of a predetermined maximum image file size.

17. The method of Claim 11 and further comprising the step of compressing a set of  
2 pixels representing the picture to produce the image

18. The method of Claim 11 wherein the plurality of picture modes includes a  
2 plurality of picture resolutions.

19. The method of Claim 11 wherein the plurality of picture modes includes a  
2 plurality of data compression levels.

20. A digital still camera, comprising:  
2 an image sensor mounted in a housing for receiving light and generating output signals  
representative of an image of an object or a scene of interest;  
4 a processing circuit mounted in the housing and connected to the image sensor for  
processing the output signals from the image sensor;  
6 a memory mounted in the housing;  
a control circuit mounted in the housing and connected to the processing circuit for  
8 successively generating a plurality of image files corresponding to a plurality of images and  
storing the image files in the memory in accordance with a selected one of a plurality of picture  
10 modes selected from the group consisting of a plurality of picture resolutions, a plurality of data  
compression levels, and combinations of picture resolutions and data compression levels, the  
12 control circuit determining a remaining picture count after each image file is stored in the

memory based on a plurality of look up tables each corresponding to one of the plurality of  
14 picture modes, the control circuit initially determining the remaining picture count based on a  
capacity of the memory before any image files have been stored in the memory and thereafter  
16 the control circuit decrementing the remaining picture count after each image file has been stored  
in the memory by a predetermined number corresponding to a size of the image file just stored,  
18 and the control circuit causing the remaining picture count to be set to zero when the control  
circuit determines that a remaining capacity of the memory is insufficient to store an image file  
20 of a predetermined maximum image file size; and

means mounted in the housing for indicating the remaining picture count to a user.

21. A digital still camera, comprising:

2 an image sensor mounted in a housing for receiving light transmitted through a lens and  
generating output signals representative of an image of an object or a scene of interest;  
4 a processing circuit mounted in the housing and connected to the image sensor for  
processing the output signals from the image sensor;  
6 a memory mounted in the housing;  
a control circuit mounted in the housing and connected to the processing circuit for  
8 successively generating a plurality of image files corresponding to a plurality of images and  
storing the image files in the memory in accordance with a selected one of a plurality of picture  
10 modes, the control circuit determining a remaining picture count by searching a look up table  
corresponding to the selected picture mode and using an actual image file size of an image file  
12 just generated; and

means mounted in the housing for indicating the remaining picture count to a user.

22. The camera of Claim 21 wherein the look up table is searched in a linear fashion.

23. The camera of Claim 21 wherein the look up table is searched in a binary fashion.

24. The camera of Claim 21 wherein the control circuit determines the remaining  
2 picture count by performing a logical AND operation between a pair of memory addresses.

25. The camera of Claim 21 wherein the look up table includes a plurality of different
- 2 free memory space values and the look up table is searched after each image file is generated to locate a pair of free space memory values that bracket an actual free memory space value determined by the control circuit based on the size of each image file that is stored.